A FIJIAN ACMOPYLE

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With one plate

AMONG the collections of John W. Gillespie from the Fiji Islands is a single specimen (no. *3273*, from Namosi Province, Viti Levu) which represents a species of *Acmopyle*. This specimen had been included in a loan of material of *Podocarpus* from the herbarium of the Arnold Arboretum and had been inadvertently identified as *Podocarpus vitiensis* Seem. It differs in many important features, both externally and internally, from *P. vitiensis*, and it agrees so generally in the anatomy of the leaves with *Acmopyle* Pilger that there can be no doubt about the generic identity. Specifically it differs somewhat from *Acmopyle Pancheri* (Brongn. & Gris) Pilger in several details, such as the external shape of the leaves and their texture, width, and apex.

This is not the first report of *Acmopyle* in the Fiji Islands. Sahni (in Phil. Trans. Roy. Soc. London B, 210: 253–310. 1920), in his treatise on the structure and affinities of *Acmopyle*, mentions an earlier collection by J. Horne in 1877–78, found in the herbarium of the Royal Botanic Gardens, Kew, which he examined in considerable detail. Sahni concluded that this specimen represents a species of *Acmopyle*. He also records the opinion of Dr. Stapf, who examined this material and who "does not consider it likely that the Fiji specimen is specifically identical with *Acmopyle Pancheri*, but he agrees to the generic identity."

We have examined the leaves of the Gillespie specimen histologically, and also those of *Acmopyle Pancheri*, numerous specimens of *Dacrydium falciforme* (Parl.) Pilger, and some of *Dacrydium taxoides* Brongn. and Gris. Details given by Sahni concerning the flattening of the leaf in these species in the vertical plane, with the vascular bundle remaining in an unchanged orientation, can be substantiated in all essentials. The vascular bundles therefore appear as if turned sidewise through 90° with reference to the leaf surface. The above mentioned two species of *Dacrydium*, representing a special section of that genus, and the two species of *Acmopyle* share in this unusual type of leaf. Leaves of the *Dacrydium* spp. possess hypoderm and are bifacial, having palisade tissue and stomates on both sides, while the leaves of *Acmopyle* found on the pectinate twigs of the last order of branching have very little or no hypoderm, palisade tissue only on the upper side which is exposed to light, and the stomates confined almost entirely to the lower surface of the leaf. The unique type of leaf anatomy therefore serves to segregate *Acmopyle* from other genera of the Podocarpaceae.

Acmopyle Sahniana sp. nov.[1]

Arbor parva; foliis spiraliter insertis, in ramulis ultimis biseriatim in una planitie expansis, basi in ramulum longe decurrentibus; laminis falcatis, 16–19 mm. longis, 3.5–4 mm. latis, supra nitido-viridibus, marginibus foliorum subparallelibus sed in apicem oblique acutum terminantibus, costa supra non conspicua; floribus masculis seminibusque ignotis.

Leaves with two bands of stomates in 14–18 irregular rows each beneath, interrupted only slightly at midvein and leaving wide non-stomatiferous bands at borders; single vascular bundle within leaf turned through 90°, the xylem toward the adaxial margin, the phloem and single resin canal toward the abaxial margin of the leaf.

FIJI ISLANDS: VITI LEVU: Namosi: Mt. Vakarongasiu, alt. 900 m., on an exposed ridge, *John W. Gillespie 3273* (TYPE in herb. Arnold Arb.), Oct. 2, 1927.

Acmopyle Sahniana may be distinguished from *A. Pancheri* (Brongn. & Gris) Pilger by the wider leaves, the more nearly parallel leaf-margins, and the obliquely acute apex. The leaves of *A. Pancheri* are usually 2.5–3.5 mm. wide, are gradually narrowed toward the tip, have a narrow rounded apex, and are thicker. Both species have the vascular bundle turned through 90° and are without hypoderm or have only scattered fibers of hypodermal tissue near the midvein of the leaves. The midvein is not centrally placed in *A. Sahniana*. The wider margin is in the adaxial position and this convex adaxial edge near the base of leaf is much thinner than in *A. Pancheri*.

OTHER SPECIMENS EXAMINED FOR COMPARISON[2]

Acmopyle Pancheri (Brongn. & Gris) Pilger

NEW CALEDONIA: Mt. Mou, *I. Franc 170* (A, US), *Le Rat 2594* (A), *Louisa Clark Williams 149* (Bish).

Dacrydium taxoides Brongn. & Gris

NEW CALEDONIA: Cougui, *Pancher 379* (NY).

Dacrydium falciforme (Parl.) Pilger vel aff.

Group A. Specimens resembling the original descriptions: MALAY PENINSULA: *R. E. Holttum* (Singapore field no. *20626*) (UC); PAHANG: Fraser Hill, 4000 ft., Aug. 25, 1923, *M. Nur 10507* (A). BORNEO: BRITISH NORTH BORNEO: Mt. Kinabalu, Marai Parai, *M. S. Clemens 10962* with seed (UC), *J. & M. S. Clemens 33078* (A, UC); Mt. Kinabalu, Penibukan, *J. & M. S. Clemens s. n.* (A); SARAWAK: Mt. Poi, *J. & M. S. Clemens 20263* (A); NETHERLANDS BORNEO: Res. Wester-Afdeeling, Bengkajang, Banan, *Neth. Ind. For. Service 24778* (A); (locality?), Batu Gajah Lugga, *B. W. Hullett 5695* (A). CELEBES: Res. Manado, Paleo, 1400 m., *Neth. Ind. For. Service 17544* (A). PHILIPPINES: MINDORO: Mt. Halcon, *E. D.*

[1] Named in honor of Professor Birbal Sahni, F. R. S., of Lucknow, India, in recognition of his comprehensive study of the morphology of this genus. Prof. Sahni, also distinguished through his researches in paleobotany, was born in India in 1891 and was educated at Punjab and at Cambridge (Eng.) Universities. He is now Professor of Botany and Dean of the Faculty of Science at the University of Lucknow.

[2] Place of deposit of specimens is shown by the parenthetical letters, as follows: (A) Arnold Arboretum; (Bish) Bernice P. Bishop Museum; (NY) New York Botanical Garden; (UC) University of California; (US) United States National Herbarium.

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